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AUTHOR McNeill, Joyce H.; Payne, Pamela K.
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ABSTRACT

This paper is an overview of cooperative learning and its application at the college level. Cooperative learning is defined as occuring when small groups of students work together to maximize their own and each other's learning. The essential elements of cooperative learning include positive interdependence, face-to-face interaction, individual accountability, interpersonal skills, and group processing. The benefits include providing students opportunities to learn from others in informal interactions, social learning that enlightens students to the differences and similarities among individuals in an informal atmosphere, the opportunity for students to practice a collaborative team model, and the experience of positive team interactions. Additional benefits include interactions in which critical thinking skills are used to come to necessary resolutions and the opportunity to cognitively incorporate theoretical concepts through practical application. Instructors also benefit, gaining insights into their students' learning not usually measurable by traditional classroom activities and assessments. Examples of models used with cooperative learning groups include "turn to your partner and...", "think, pair, and share", and "triads with speakers and listeners." Evaluation methods in cooperative learning include student journal writing, student learning logs, and student-instructor conferences. Examples of student journal responses and student learning log comments are included as appendices. (JLS)

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Cooperative Learning Groups at the College Level:

Applicable Learning

Joyce H. McNeill, Ph.D.
University of South Alabama
and
Pamela R. Payne, M.A.
Southern Illinois University

ADDRESS: Joyce H. McNeill, Ph.D.
Department of Special Education
University of South Alabama
Mobile, AL 36688

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Cooperative Learning Groups at the College Level: Applicable Learning

Cooperative learning is defined as small groups of students working together to maximize their own and each other's learning (Johnson & Johnson, 1989). In cooperative learning activities, students have two responsibilities: to learn the assigned material, and to make sure that all group members learn the assigned material (Slavin, 1990). Groups must be structured to include the essential elements of positive interdependence, in which each member can succeed only if all members succeed; face-to-face interaction, in which students assist and support each other's efforts; individual accountability, which ensures that every member is responsible for the final learning outcome; interpersonal skills, those required to work cooperatively with others in socially appropriate ways; and group processing, in which groups reflect on how well members are working together. When all elements are present, positive social learning interactions occur (Johnson & Johnson, 1989).

In the traditional competitive learning situation, students work against each other to achieve the highest grade, a goal that few students can attain. However, when cooperative learning activities are utilized, one or two students are not the only ones who achieve. Rather, cooperative learning activities allow student success in an interactive, responsive, cooperative, thinking environment (Lyman, 1992). Students participating in cooperative learning groups gain academically and socially, increasing their self-esteem, enjoyment of the subject studied, and time-on-task (Lyman, 1992). They also benefit from the opportunities cooperative learning groups provide for learning from others in informal interactions, practicing use of a collaborative model, utilizing critical thinking skills in hands-on situations, and incorporating theoretical concepts into best practices through practical application.

Benefits of Cooperative Learning Groups

As stated, a benefit of cooperative learning groups for college students is that they provide students opportunities to learn from others in informal interactions. Students

interact by discussing, elaborating, questioning, listening, and responding to each other. The social learning experiences provided by cooperative learning groups enlighten students to the differences in and similarities between individuals in an informal, "let's arrive at a resolution" atmosphere. The result is applicable learning acquired in an informal, noncritical environment.

Another benefit of cooperative learning groups is that they provide students opportunities to practice using a collaborative team model. Students are taught to listen to each other and to think before responding or questioning, and then to utilize these thinking and listening skills. As group members practice cognitive and verbal summations and explanations of groups members' contributions, they are more likely to experience the positive benefits of teamwork. When students experience positive team interactions and realize the benefit of collaborative effort, they develop collaborative means for problem solving and generating options which they use in different settings and with different groups of individuals in subsequent interactions (Johnson & Johnson, 1992).

A third benefit of cooperative groupings is that they provide interactions in which critical thinking skills are used to come to necessary resolutions. Editors Davidson and Worsham (1992) postulate that higher order thinking skills evolve from experiences occurring in cooperative learning environments. Students inquire and discuss ideas and assignments, all the while developing new mental schemas for resolving conflicts. Use of critical thinking skills required for problem solving which are developed in cooperative learning groups allows for the assimilation of new learning and later use of this learning to resolve problems (Johnson & Johnson, 1992).

Cooperative learning groups also allow students to cognitively incorporate theoretical concepts through practical application. As students take in theoretical, factual information and then verbally interact regarding its relevance to their own lives, they create cognitive links from the present experiences to those experiences and related concepts from their earlier experiences (Slavin, 1990). Students then utilize the theoretical concepts, now

linked to personal experience, because these concepts have personal relevance. Because cooperative learning groups provide so many learning advantages not provided by traditional instruction, examples of three easy-to-use, popular cooperative learning activities are provided below, with rationales for each included.

Examples of Cooperative Learning Groups

Explanation of three models of cooperative learning interactions follows, heirarchically delineated from those requiring less student interaction and thought to those requiring more. In the "Turn to your partner and..." (TTYPA) model, students are provided an opportunity for an informal, quick interaction in which they turn to a partner and discuss a new concept. For example, if an instructor has finished explaining the meaning of *metacognition* to students, the he or she might state, "Turn to your partner and recite a poem that you know by memory." When partners have completed their recitations, the instructor may have partners tell each other how they initially learned this piece and how they now retain that learning. In this way, the lecturer allows students to tie a real-life experience (recitation) to the means by which it was remembered and retained (metacognition). This model, usually requiring no more than five minutes of class time, aids in the development of communication skills, provides for quick review of information, and provides an opening activity for a new topic.

In the think, pair, and share model, students are instructed by the teacher to think about an instructor-provided topic, pair with another student to discuss the topic, and then share their thoughts with the entire class. This model is used over time to develop metacognitive behaviors such as generation and revision of hypotheses, inductive and deductive reasoning, and application of information. For instance, an instructor might suggest that the students spend a couple of minutes considering a term from the previous night's reading (e.g., *metacognition*). The instructor then would suggest that students pair to discuss metacognition, generating a list of a few important facts relating to its definition and development. Then, the instructor would have students share their pair's information with the class. A student-generated list of facts and related information could be developed for later use in the present or a subsequent class period.

In the triads with speakers and listeners model, two partners discuss a designated topic while the third group member records information. For the topic of *metacognition*, the instructor might indicate that he or she wishes students to form triads where they practice the metacognitive strategy "attention to detail." Two members of the triad (the speakers) are told to describe in detail, in a five minute period, Whistler's picture, "Symphony in White," one of many portraits which the class has been using for cooperative learning activities throughout the semester. The third student (the listener) records and reports what the speakers say. Later, students switch roles, so that each student experiences each role.

Assessment of Student Learning in Cooperative Learning Groups

Instructors who use traditional types of assessment such as multiple-choice and fill-in-the-blank tests may wonder how to assess student learning when alternative means of instruction such as cooperative learning groups are used. The learning occurring during cooperative learning groups cannot be measured by rating students' fill-in-the-blank or multiple choice test responses; these assessment formats assess rote knowledge. Rather, the interactive, higher-level cognitive skills required by cooperative learning group interactions necessitate use of alternative, less traditional assessment devices which assess higher-level cognitive skills and application of learning. A current mechanism for assessing student learning and for encouraging instructor-student interchange is reflective journal writing. Payne (1995) reported that her students' journal writings indicated their satisfaction with learning groups resulted primarily from learning from and sharing ideas with each other. A sample from one of Payne's student's reflective journal writings is included as Table 1.

Another means for assessing student learning is student learning logs. Learning logs differ from reflective journals in that journal topics are rarely assigned; rather, the instructor reminds students that they are to reflect on the classroom interactions and class topic and to write informally their thoughts. In learning logs, students respond to open-

ended, teacher-developed questions regarding the subject matter and student comprehension of the day's topic; less reflection is required. McNeill (1996) has used learning logs with her undergraduate students who request knowing how she will assess their writing. Therefore, she requires students to write approximately one page of information which focuses on the day's topic and which includes their personal responses to the learning which has taken place. Her students' comments in learning log writings indicate that cooperative interactions have resulted in increased comprehension of material and appreciation of classmates' knowledge. Students further indicate a high level of satisfaction with learning log writings, which they described as opportunities for "...nonthreatening personal interchange..," "...ungraded means for questioning you..," and "...a way to review and synthesize my learning at my own pace." Samples taken from several students' learning logs are included as Table 2.

Another means for assessing student learning is student-instructor conferences. In the author's classes, students schedule a minimum of two 15-minute appointments during the quarter. In these conferences, McNeill (1996) and her students discuss students' learning, concerns, and needs. During this conference, the student and instructor jointly review the student's assignments, and the student's questions are answered and concerns discussed. Student-instructor conferences provide yet another mechanism for students to discuss their learning and the instructional activities utilized in their classes with their teachers; conferences serve as another means for assessing student understanding of subject matter and student ability to generalize course content to other situations.

Cooperative learning groups provide many benefits for college-level students. Students interact with and learn from their peers, use higher-order thinking skills, and cognitively incorporate and practice using new learning. Instructors also benefit, gaining insights into their students' learning that traditional classroom activities and assessments cannot measure. Use of learning logs, journal writings, and conferences allows instructors to assess student interactions and learning while supporting further student

learning and interaction; instruction directly relates to assessment. Creation of a social learning environment where theory and practice go hand-in-hand requires a philosophical shift from the use of instructional strategies associated with traditional classrooms to the use of those associated with a nontraditional, student-centered cooperative environment. This shift to student-centered, applicable learning is necessary, for success in today's society and workforce. Cooperative learning activities can serve as the primary vehicles for creating a social learning environment.

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Table 1
A sample of one student's journal responses regarding cooperative learning groupings

8/24/95
"Up until now, I have been basing most of my thoughts purely on professors' opinions.... Now I must form my own feelings and opinions.... I am looking forward to meeting my classmates and also to working with them.... It will be interesting to hear their sides."

8/31/95
"I really enjoyed sharing my ideas in the small groups. I had the chance to hear other people's opinions on the subject.... It was comforting in that my group members were also involved in the field of sped (special education). It was reassuring to be "backed" by classmates, but I found that later, after we joined with the rest of the class, I was subject to criticism, constructive criticism, to boot.... Class discussion was very effective. It roused many feelings, thoughts and new ideas."

9/7/95
"Tonight's class was a very informative and realistic view of an actual IEP (Individualized Educational Plan) meeting. First of all, we were split into groups of six, each of us serving different roles in the mock meeting. This exercise was hard to carry out.... I believe that all members must have a high level of sensitivity for one another.... This experience helped me see all sides and the levels of frustration concerning both the student and the parent. It also enforced the technical side of the IEP meeting. The activity was very informative and valuable. Many sides were presented and many different concerns came out."

9/28/95
"Our (group) project was focused on writing up two different students' goals.... We were totally involved in some kind of suggestion and solution (the entire period). Our group came up with very effective ideas. It was very helpful to hear others' views. Then, we had to exchange with another group and critique their views. Yet another side of the coin."

Pamela Payne, Assistant Professor
Department of Education
Western New Mexico University, Silver City, NM

Table 2
Samples of students' learning log comments

What one behavior did your classroom teachers assume was unalterable about you, and how might correction of that misconception have changed your own school experience?

Student C-- "IF only one teacher had taken an interest in my learning and given me the encouragement I needed, I believe I would have been a better student. Until this year, at 40, I just learned enough to 'get by.'"

Student F--"My fourth grade teacher was more apt to help those students who caught on quickly. ...I think my teacher could have made a difference...by increasing my knowledge in math subjects by realizing that some of us need time to think."

Student I--"I think if a teacher would have encouraged me to speak and ask questions then today I would not be as passive in class. They assumed I was shy, and shouldn't call on me....I still worry if my questions are stupid or if I was the only one in class that didn't understand."

General comments to professor:

Student D--"I really like the way you teach, the way you related everything to experiences. It seems to help me recall the information better.... You make an extra effort to call us by name and seem to want to know our names. I think it is very important, especially when you are talking to us about individualizing our instruction and our expectations."

Student H--"I really like the group interaction when four students discuss information. It relieves the tendency to get bored doing the same thing for an hour and fifty minutes."

Student I--"Your use of so many examples really helps me learn the material better, because I can relate it to your stories or even to my everyday life. On tests, I find that my recall is much better when I have examples that help me remember the material. This also helps keep the class interested. When you have to sit through straight lecture it can be very boring."

Student J--"It seems helpful when we get into groups to discuss ideas. This helps new information to sink in better. It also allows us to see from another point of view which might be a better explanation, or at least a variation. Also, it helps to see similarities or differences in the way we think."

Joyce McNeill, Assistant Professor
Department of Special Education
University of South Alabama, Mobile, AL